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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,353	06/26/2003	Chang Ho No	3811-0121P	3261

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EXAMINER
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TALBOT, BRIAN K

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/606,353	Applicant(s) NO ET AL.	
	Examiner Brian K. Talbot	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on oral election on 5/13/05.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/17/03</u> | 6) <input type="checkbox"/> Other: _____  |

*Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-9, drawn to a method of making a reflective reflector pattern, classified in class 427, subclass 58+.
  - II. Claims 10-11, drawn to a reflective reflector pattern, classified in class 428, subclass 1+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as by laminating a reflective reflector pattern as opposed to coating. In addition, the process can be used to form other and materially different products such as printed circuitry.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Joseph Kolasch on 5/13/05 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-11 have been

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withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1-9 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The steps of "forming" such as coating, exposing and reducing (see claims 2 and 3) are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, the term "forming" is vague and indefinite. It is unclear what is covered by the term "forming". Clarification is requested. The term "high" is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

With respect to claim 3, the term "soft" is a relative term which renders the claim indefinite. The term "soft" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

With respect to claim 5, the phrase "is different from each other" is confusing as it is unclear what the term is different from. Clarification is requested. The ranges including "0" are vague and indefinite. The term "0" for "L" would render the claim confusing as there would be no ligand present which contradicts the claimed "organometallic compound".

With respect to claim 6, the term "representative elemental metal" is unclear. What is a "representative" metal? Clarification is requested.

With respect to claim 7, it is unclear that all the terms recited are indeed Ligands, for example, nitro, cyano, hydrogen, etc. Clarification is requested.

With respect to claim 8, it is unclear that all the terms recited are indeed anions, for example, nitro, cyano, carbonates, etc. Clarification is requested.

*Claim Rejections - 35 USC § 102*

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Chen et al. (5,989,653).

Chen et al. (5,989,653) teaches a process for metallization of a substrate by irradiative curing of a catalyst applied thereto. A catalyst solution is applied to a substrate. Metallic clusters are formed by irradiating the substrate. Electroless plating can then deposit onto the metallic clusters. Additionally electrolytic coating can follow the electroless plating step (abstract). A mask can be used for selective exposure of the catalytic solution (col. 3, lines 5-20). The catalyst solution can be applied in a variety of ways including ink-jet printing (col. 4, lines 35-50).

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Clarke et al. (4,869,930)

Clarke et al. (4,869,930) teaches a method of preparing substrates for deposition of metal seed from organometallic vapor for subsequent electroless metallization. Clarke et al. (4,869,930) teaches applying an organometallic compound which includes M – metal, L-ligands

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and X- anions to a substrate. The organometallic material is physically, chemically or by other means decomposed to form a seed metal. The decomposing means includes heating, oxygen atmosphere, irradiation, etc (col. 7, lines 5-65). Electroless deposition is followed to form the metal layer.

*Claim Rejections - 35 USC § 103*

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBM Technical Disclosure Bulletin, Nov. 1989 or Hill et al. (5,534,312) in combination with Chen et al. (5,989,653).

IBM Technical Disclosure Bulletin, Nov. 1989 teaches a method of forming wiring patterns and vias on a substrate. A thin uniform layer of an organo-metallic is deposited as a powder on the surface of the substrate. The desired wiring pattern is then developed in the powder layer by selective application of heat, a laser, and the organo-metallic will decompose only where heat is applied forming adherent pattern of metal on the substrate. The unexposed organo-metallic layer is removed. The selective thermal decomposition is performed with a mask.

Hill et al. (5,534,312) teaches a method of directly depositing metal containing patterned films. A metal complex is applied to a substrate, irradiated with light through a mask to form a selective area (abstract, Fig. 1, col. 3, line 55 – col. 6, line 65)

IBM Technical Disclosure Bulletin, Nov. 1989 or Hill et al. (5,534,312) fail to teach electrolessly coating the metal layer.

Features described above concerning with Chen et al. (5,989,653) are incorporated here.

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified with IBM Technical Disclosure Bulletin, Nov. 1989 or Hill et al. (5,534,312) process by performing a subsequent electroless plating step atop the formed metal layer as evidenced by Chen et al. (5,989,653) with the expectation of achieving a similar success as well as a desired thickness of the metal layer.

11. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBM Technical Disclosure Bulletin, Nov. 1989 in combination with Chen et al. (5,989,653) further in combination with Clarke et al. (4,869,930).



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IBM Technical Disclosure Bulletin, Nov. 1989 in combination with Chen et al.

(5,989,653) fail to teach the claimed compositional make-up of the organo-metallic compound.

Clarke et al. (4,869,930) teaches a method of preparing substrates for deposition of metal seed from organometallic vapor for subsequent electroless metallization. Clarke et al.

(4,869,930) teaches an organometallic compound which includes M – metal, L-ligands and X-anions. The materials are detailed in col. 5, line 45 – col. 8, line 30).

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified IBM Technical Disclosure Bulletin, Nov. 1989 in combination with Chen et al. (5,989,653) process by utilizing the precursors of Clarke et al. (4,869,930) with the expectation of achieving similar success.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Handwritten signature of Brian K Talbot and the date 5/13/05.

Brian K Talbot  
Primary Examiner  
Art Unit 1762

BKT